

Work Order ID 78409

78409

Page 1

January-09-12 8:58:33 AM

Item ID: D350-636-017

Accept

N9000040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 23/01/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: M.C.J Date: 12/01/09 Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4168	A
IIN-D350-636	I

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-017 CHG 002

Handwritten notes:
 12/01/09
 or Chg 3 per ECN 12-542
 -depends on D4154-041 Rev B or C?
 HJ Per M.C.J 12-6-05

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Skidtubes	0.00							
110									
Skidtubes	Memo	0.00							
Skidtubes	1- Pick D2600-3 Bent								
	2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750								
	3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.								
	4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting								
	5- Drill fwd step holes using DT9616. Ensure proper positioning.								
	6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)								
	7- Clecko DT8863B on second side of tube and drill pilot holes for detail B. ***SECOND SIDE***								
	8-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)								
	9-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to 0.297".								
	10-Open up holes of Detail A to 0.297" (total of 2 holes per side)								

1 0 86 12/5/30

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Stop ***NR2***

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11-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left

from bending as per QSI 004

A/R Aluminum Rod batch: *m120854*

BE 12/5/10

12-Grind welds flush as per Dwg D2750

120

QC10- Inspect visual per QSI004- ground welds

0.00

120

8 12/5/30

QC

Memo

0.00

Quality Control

130

QC5- Inspect part completeness to step on W/O

0.00

130

8 12/5/30

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____


Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00							
140									
HandFinish	Memo	0.00							
Hand Finishing									
150	QC3- Inspect Part Finish	0.00							
150									
QC	Memo	0.00							
Quality Control									

1 7/6 12-5-31

DP 12-6-1

PTO

W/O: 78409		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval. Chief Eng / Prod Mgr	Approval QC Inspector
12-6-1	150	Should read QC7		12-6-1			

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Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	Skidtubes	0.00							
160									
Skidtubes	Memo	0.00							
Skidtubes	1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.								
	2-Open up holes of Detail B to 0.750" (total of 4 holes per side) as per dwg D2750.								
	3- Open float hole to 0.500" (4 per side)								
	4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750 (welding instructions on sheet 8)								
	5-Deburr and blow out all chips from inside of tube								
	6- Prepare tube for welding, remove alodine as required.								
	7-Bond web D2739 in place as per QSI 015 A/R Sikaflex-291 batch: <u>M121409</u> exp. date: <u>13-4-12</u>								
	8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 8) A/R Aluminum Rod batch: <u>M120 B54</u>								
	9- At section AJ-AJ drill out x-bolt spacer to 0.404"								
	10-Grind welds flush as per Dwg D2750								

DL 12/05/07

CF 12-6-7

DB 12/06/11

BB 12/06/13

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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1

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Reference:

Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11-Spot face ground handling holes section (total of 4 places per side) as per dwg D2750

BE 12/06/13

12- C'bore section CJ-CJ

13- Deburr holes

SAD 12-06-13

***** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING HOLE IN TUBE *****

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Run Start *NR1*

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Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190 Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

1 12613

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Powder Coating

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

10:00

210

QC3- Inspect Part Finish

0.00

210

QC

Quality Control

Memo

Inspect for foreign object per QSI 024

0.00

1X 12/06/15

1x 12/06/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							
220	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1- Install inserts as per Dwg D2750								
230		0.00							
230	HandFinishing								
HandFinish	Memo	0.00							
Hand Finishing	1-Inspect for Foreign Objects								
	2-Spray inside of tube with "LPS-3" batch: <u>11110842</u>								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750								
	SIKA FLEX 241								
	BATCH: <u>1112409</u>								
	EXP DATE: <u>12/09</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube								
	A/R 55-o'ring lube batch: <u>11110842</u>								
	5-Coat all exposed fasteners with "LPS Procyon" batch: <u>11110842</u>								

1111 4 11110842

1111 4 11110842

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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 Required Date: 23/01/2012 Req'd Qty: 1.00 ***1*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
240									
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
250									
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
260									
QC	Memo	0.00							
Quality Control	*****ensure antiseize is on AN8C21A bolts*****								

1.4/H PD 12-06-22

[Handwritten signature]

8.2/06/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

270

0.00

270

Packaging

Packaging

Memo

0.00

Identify and pack for shipping as per PPPD350-636-017

Location:

PPP rev: **B**

280

QC21- Final Inspection - Work Order Release

0.00

280

QC

Memo

0.00

Quality Control

1X

12-6-26

12/6/27

mr-

12-06-26

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Picklist Print

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D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC
per NCR 11-906 DD verf:EC

IPP Rev:B
IPP Rev:C 11.10.18 as

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3490-1		Manufactured	No			160	Each	62.0000	4	4			
---------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

D3490-1

Cross Bolt Spacer

**

Location

Loc Qty

Loc Code

LG001

62

62450

2

74875

20

77042

40

AN3C34A		Purchased	No			230	Each	55.0000	1	1			
---------	--	-----------	----	--	--	-----	------	---------	---	---	--	--	--

AN3C34A

BOLT

**

Location

Loc Qty

Loc Code

ST353

55

116075

35

117514

20

AN3C36A		Purchased	No			230	Each	114.0000	4	4			
---------	--	-----------	----	--	--	-----	------	----------	---	---	--	--	--

AN3C36A

BOLT

**

Location

Loc Qty

Loc Code

FG

4

101261

4

ST353

110

116590

0

119083

2

119324

92

119530

16

BE 12/06/11
883269 x4

12/06/22

12/06/22

VJ

W/O:		WORK ORDER CHANGES					
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Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C37A

Purchased

No

230
230

Each

128.0000

1

1

**

M121061 [8]

AN3C37A

BOLT

Location

Loc Qty

Loc Code

ST354

128

116874

11

117010

2

118709

50

119324

25

119531

40

230
230

Each

49.0000

1

1

**

M121103 [8]

AN3C42A

Purchased

No

AN3C42A

BOLT

Location

Loc Qty

Loc Code

ST354

49

106176

1

117763

3

118131

20

119673

25

D3490-5

Manufactured

No

230

Each

20.0000

4

4

**

BEP106/11
B78958 ~4

D3490-5

Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG001

20

59230

20

W/O:		WORK ORDER CHANGES					
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Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3492-1 Manufactured No

230 Each

110.0000 8 8

D3492-1

Plug

**

HL 12/06/20

Location

Loc Qty

Loc Code

FP002

110

B83259

vg

69531

8

74444

2

76235

100

D3492-5 Manufactured No

230 Each

32.0000 8 8

D3492-5

Plug

**

HL 12/06/20

Location

Loc Qty

Loc Code

FP002

32

B83100

vg

77044

32

D3873-1 Manufactured No

230 Each

387.0000 7 7

D3873-1

Bushing

**

HL 12/06/22

Location

Loc Qty

Loc Code

ST088

387

B76790

x7

64760

1

68247

4

73829

19

73830

2

76792

361

D4154-041 Manufactured No

230 Each

1.0000 1 1

D4154-041

Wearplate Assembly

B83220

POV

(x1) HL 12/06/22

Location

Loc Qty

Loc Code

FP001

1

71442

1

January-09-12 8:58:37 AM

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Page 3

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval, Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 4

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

D4170-1	Manufactured	No	230	Each	21.0000	4	4
---------	--------------	----	-----	------	---------	---	---

D4170-1

Bushing

**

Location

Loc Qty

Loc Code

LG001

21

71844

5

76677

16

D4171-1	Manufactured	No	230	Each	12.0000	1	1
---------	--------------	----	-----	------	---------	---	---

D4171-1

Bushing

**

Location

Loc Qty

Loc Code

ST135

12

77008

12

MS21043-3	Purchased	No	230	Each	1,309.000	5	5
-----------	-----------	----	-----	------	-----------	---	---

MS21043-3

Nut

**

Location

Loc Qty

Loc Code

FG

72

103691

72

ST300

698

119901

698

ST301

539

118077

2

118614

441

118686

30

119758

66

BE 12/06/11
B82043 x4 ✓

xl 12/06/27

xl

xl 12/06/27

x5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 5

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0363R

Purchased

No

230

Each

3,734.000

9

9

NAS1149C0363R

Washer

**

HL 12/06/12

Location

Loc Qty

Loc Code

ST297

3734

114742

3734

x9

NAS1515H3L

Purchased

No

230

Each

179.0000

4

4

***NAS1515H3I ***

WASHER

**

HL 12/06/12

Location

Loc Qty

Loc Code

FG

40

102472

40

11 121556

VD

ST277

139

118686

3

119438

36

120072

100

NAS1611-005

Purchased

No

230

Each

204.0000

8

8

NAS1611-005

O-RING

**

HL 12/06/12

Location

Loc Qty

Loc Code

FP001

204

106099

31

114220

105

119438

68

x8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 6

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

179.0000

8

8

NAS1611-010

O-RING

**

21 12/06/20

Location

Loc Qty

Loc Code

FP

100

112158d

28

110915

0

120121

100

FP001

79

110915

14

117460

8

118077

1

118612

3

119438

47

119623

6

NAS1149D0863J

Purchased

No

250

Each

159.0000

2

2

NAS1149D0863.I

WASHER

**

120308

CE 12/6/20

Location

Loc Qty

Loc Code

ST298

159

118078

59

119307

100

D2744

Manufactured

No

110

Each

33.0000

1

1

D2744

Cap

**

BE 12/05/30
B78900 *1

Location

Loc Qty

Loc Code

LG002

33

62715

1

70881

12

71861

20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 7

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110 Each

18.0000 1 1

D2600-3-BENT

Extrusion Bent

**

B 83442 BE 12/05/10

Location

Loc Qty

Loc Code

LG

18

66875

7

73253

1

75021

1

75022

1

75023

1

77623

7

D2743

Manufactured No

160 Each

153.0000 8 8

D2743

Crossbolt Spacer

**

B 83262 BE 12/06/11

Location

Loc Qty

Loc Code

LG001

153

67766

4

68251

3

73403

64

74445

82

D2739

Manufactured No

160 Each

1.0000 1 1

D2739

350 I Beam

**

CF 126-7

Location

Loc Qty

Loc Code

LG

1

72155

1

B 83447

1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

January-09-12 8:58:38 AM

Page 8

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

ALS4-1032-225

Purchased

No

230

Each

1,094.000

4

4

AI S4-1032-225

Insert

**

yl 12/06/20

Location

Loc Qty

Loc Code

ST281

1094

M121269

xl

108696

199

110768

62

118386

765

118966

68

AN8C35A

Purchased

No

230

Each

80.0000

1

1

AN8C35A

BOLT

**

yl 12/06/27

Location

Loc Qty

Loc Code

FP002

79

115960

1

117834

22

118286

56

ST346

1

xl

114442

0

115188

0

115960

1

D3488-041

Manufactured

No

230

Each

14.0000

1

1

D3488-041

Blade Fitting Assembly, LH

**

yl 12/06/22

Location

Loc Qty

Loc Code

FP002

14

61689

1

B35733

xl

69903

4

75056

9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 9

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

76.0000

4

4

AN6C44A

BOLT

**

HL 12/06/12

Location

Loc Qty

Loc Code

FG

2

M121689

x3

103964

2

ST343

74

M121440

x1

119125

29

120095

20

120143

25

MS21083C8

Purchased

No

230

Each

89.0000

1

1

MS21083C8

NUT

**

HL 12/06/12

Location

Loc Qty

Loc Code

FP002

1

M121185

x1

115884

1

ST303

38

115884

0

118077

1

118614

6

119309

2

119436

25

119638

4

ST304

50

120142

50

D3631-1

Manufactured

No

230

Each

343.0000

8

8

D3631-1

Washer

**

HL 12/06/12

Location

Loc Qty

Loc Code

ST072

343

B83588

x8

68062

2

75548

341

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Shop Packet Print

Page 9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 10

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN960C10L NAS1149C0332 Purchased No

230 Each 0.0000 4 4

*AN960C10I *

washer

D2745

Manufactured No

230 Each 81.0000 8 8

D2745

Bushing

Location

Loc Qty

Loc Code

FP001

81

1383260

69529

1

76142

80

NAS1149C0832R

Purchased

No

230 Each 319.0000 1 1

NAS1149C0832R

WASHER

Location

Loc Qty

Loc Code

ST297

319

114915

319

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

Picklist Print

Page 11

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Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

206.0000

4

4

AN3C6A

BOLT

**

yl 12/06/22

Location

Loc Qty

Loc Code

FP001

1

M 121 68 Z

yd

111982

1

ST351

205

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

100

119749

37

MS21043-6

Purchased

No

230

Each

373.0000

4

4

MS21043-6

NUT

**

yl 12/06/20

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

353

112314

143

117887

10

118384

200

yd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

January-09-12 8:58:38 AM

Page 12

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250 Each

15.0000


2

2

D3493-1

Washer

**

82 023 

Location

Loc Qty

Loc Code

ST062

15

70697

2

76237

13

MS21083C8

Purchased No

250 Each

89.0000

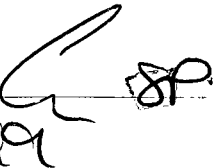
2

2

MS21083C8

NUT

**

m/21208 
m/21349

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

38

115884

0

118077

1

118614

6

119309

2

119436

25

119638

4

ST304

50

120142

50

AN8C21A

Purchased No

250 Each

79.0000


2

2

AN8C21A

BOLT

**

121278 

Location

Loc Qty

Loc Code

ST343

79

118758

5

119530

24

120094

50

January-09-12 8:58:38 AM

Shop Packet Print

Page 12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 13

Work Order ID: 78409

78409

Parent Item: D350-636-017

D350-636-017

Parent Item Name: Skidtube w/ Training Wearplates, LH

Start Date: 09/01/2012

Required Date: 23/01/2012

Start Qty: 1.00

Required Qty: 1.00

D2741

Manufactured No

250

Each

16.0000

1

1

D2741

Blade, 350 Skidtube

**

79816 / 12/4/20

82

Location

Loc Qty

Loc Code

ST

-10

ST466

26

71856

16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

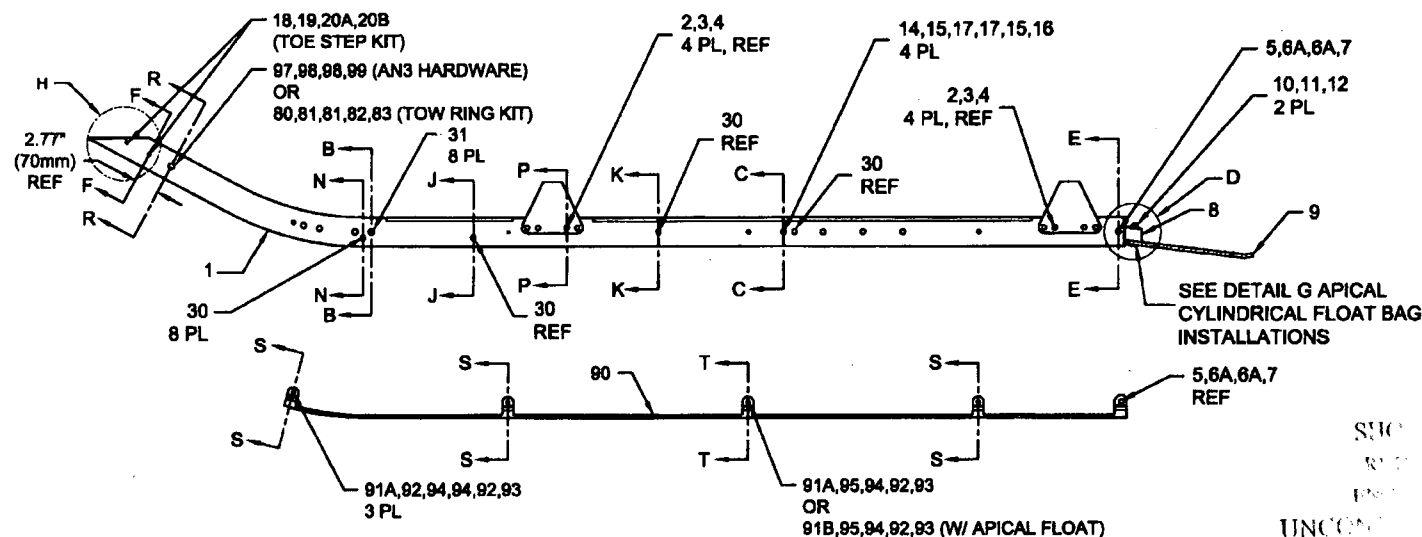
Figure 3: D350-636-015/-016/-017/-018/-215/-216/-217/-218 SKIDTUBE ASSEMBLY

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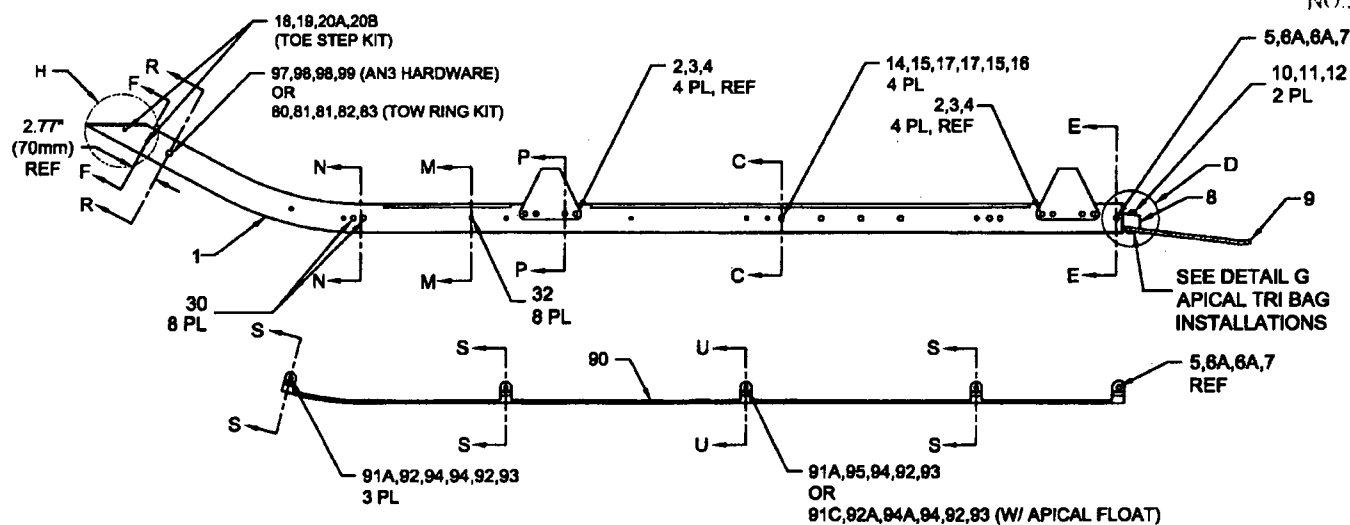
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Revision: **I**

Date: 10.10.25



**D350-636-015/-016/-215/-216
(Aerazur/Apical Cylindrical)**



**D350-636-017/-018/-217/-218
(Aircruiser/Apical Tri-bag)**

SUC
REF
P
UNCON
SUBV
WT

NO. 78409 M.L.J
12/01/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1				D4168-1	SKIDTUBE WELDMENT, LH
	1			D4168-2	SKIDTUBE WELDMENT, RH
		1		D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
 - POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- WELD PER DART QSI 004
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 - MINIMUM YIELD TENSILE STRENGTH = 35 KSI
 - MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
- POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

RELEASED
2010-09-15

A		NEW ISSUE		SC	10.08.09
REV.		DESCRIPTION		BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.			
DRAWN	SC	PORT HADLOCK, WA			
CHECKED		DRAWING NO.	REV. A		
MFG. APPR.		D4168			
APPROVED		TITLE	SCALE		
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS		
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

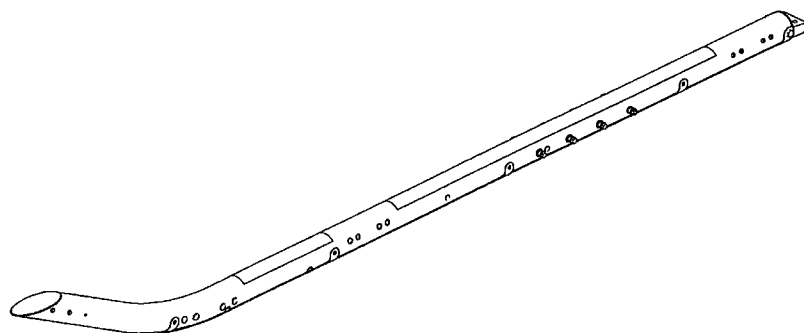
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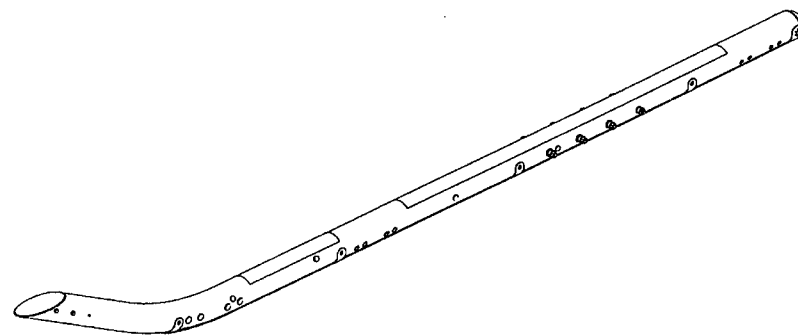
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

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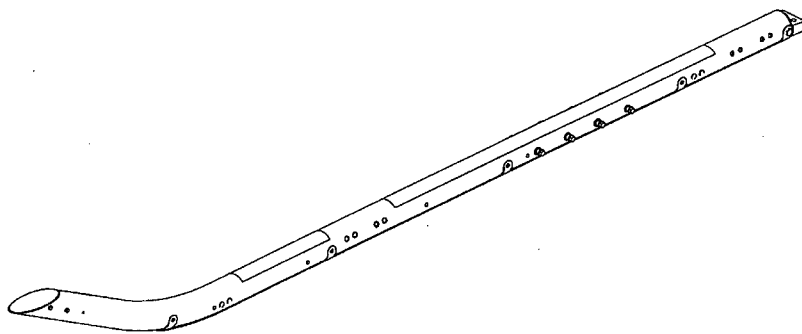
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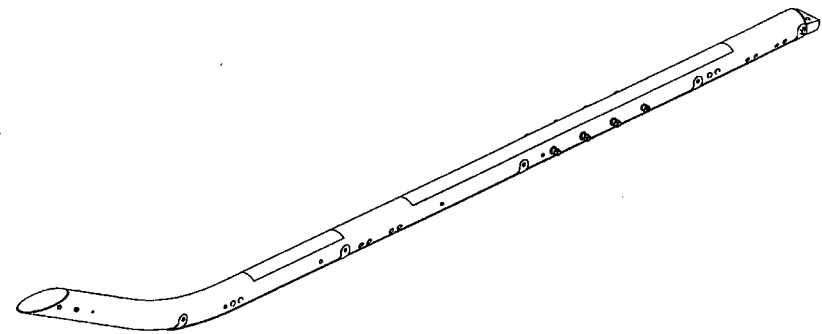
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

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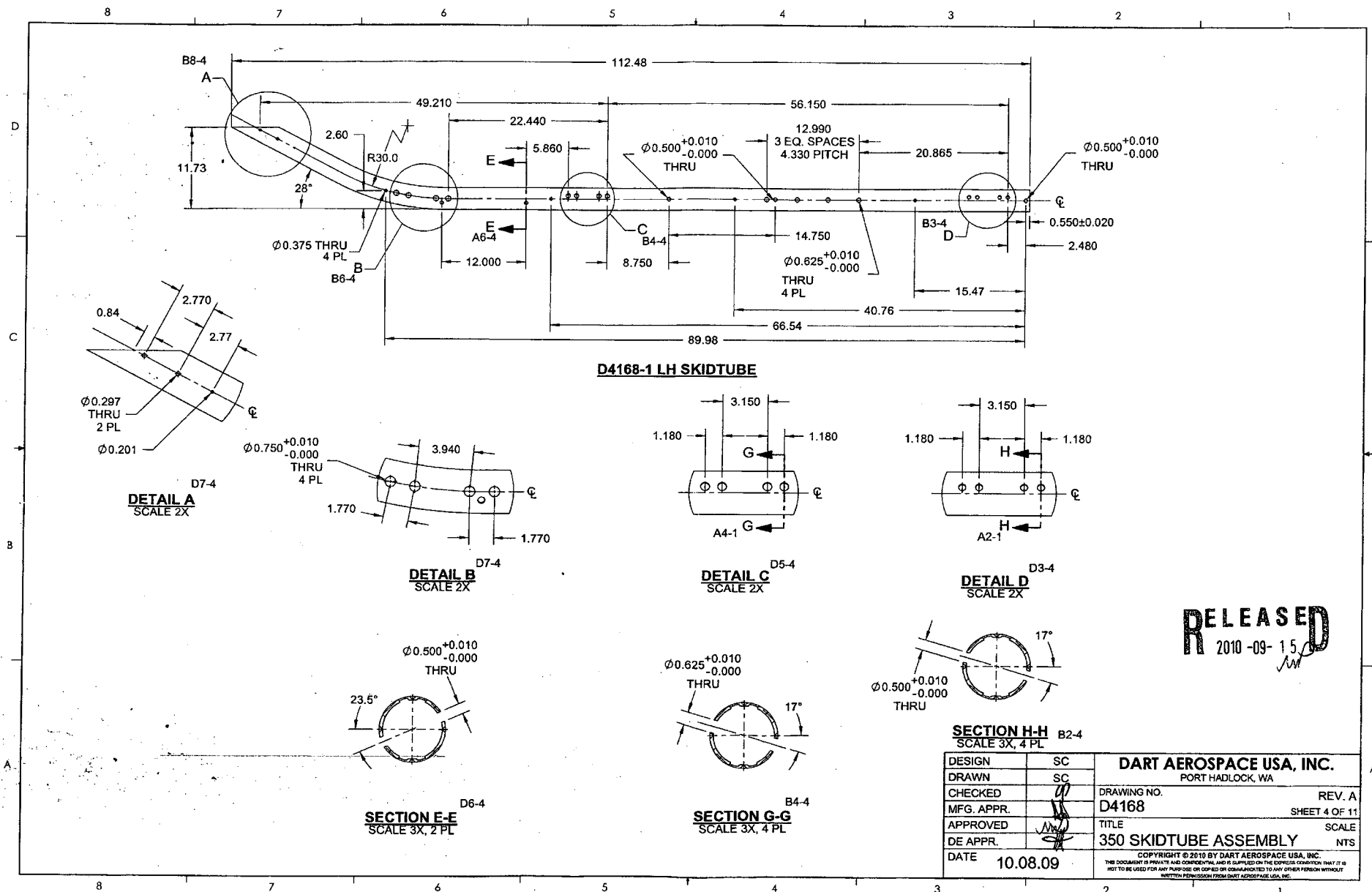
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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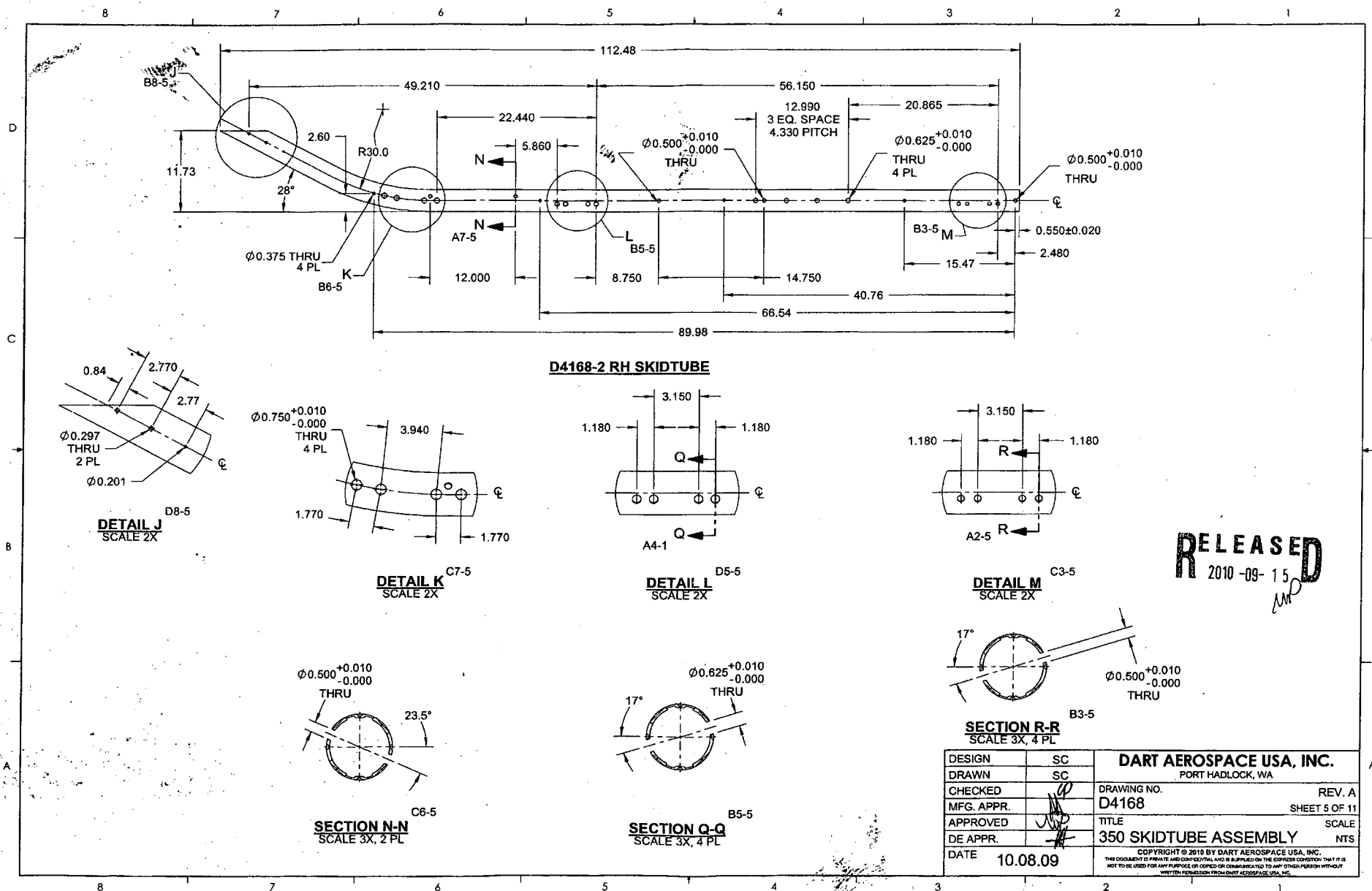
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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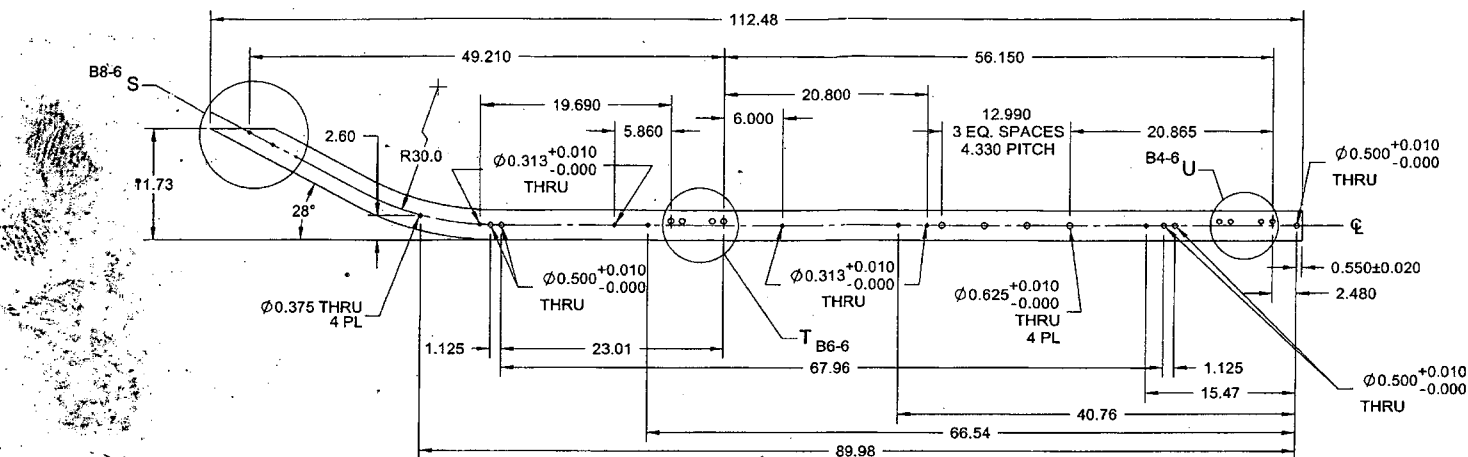
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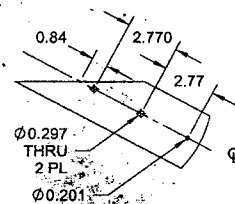
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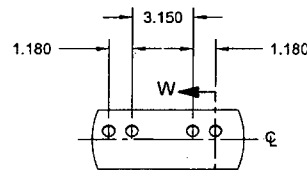
78409



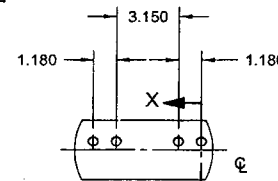
D4168-3 LH SKIDTUBE



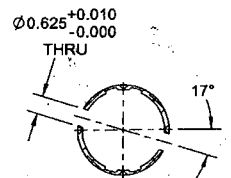
DETAIL S
SCALE 2X



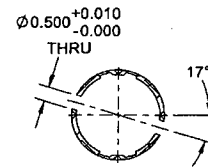
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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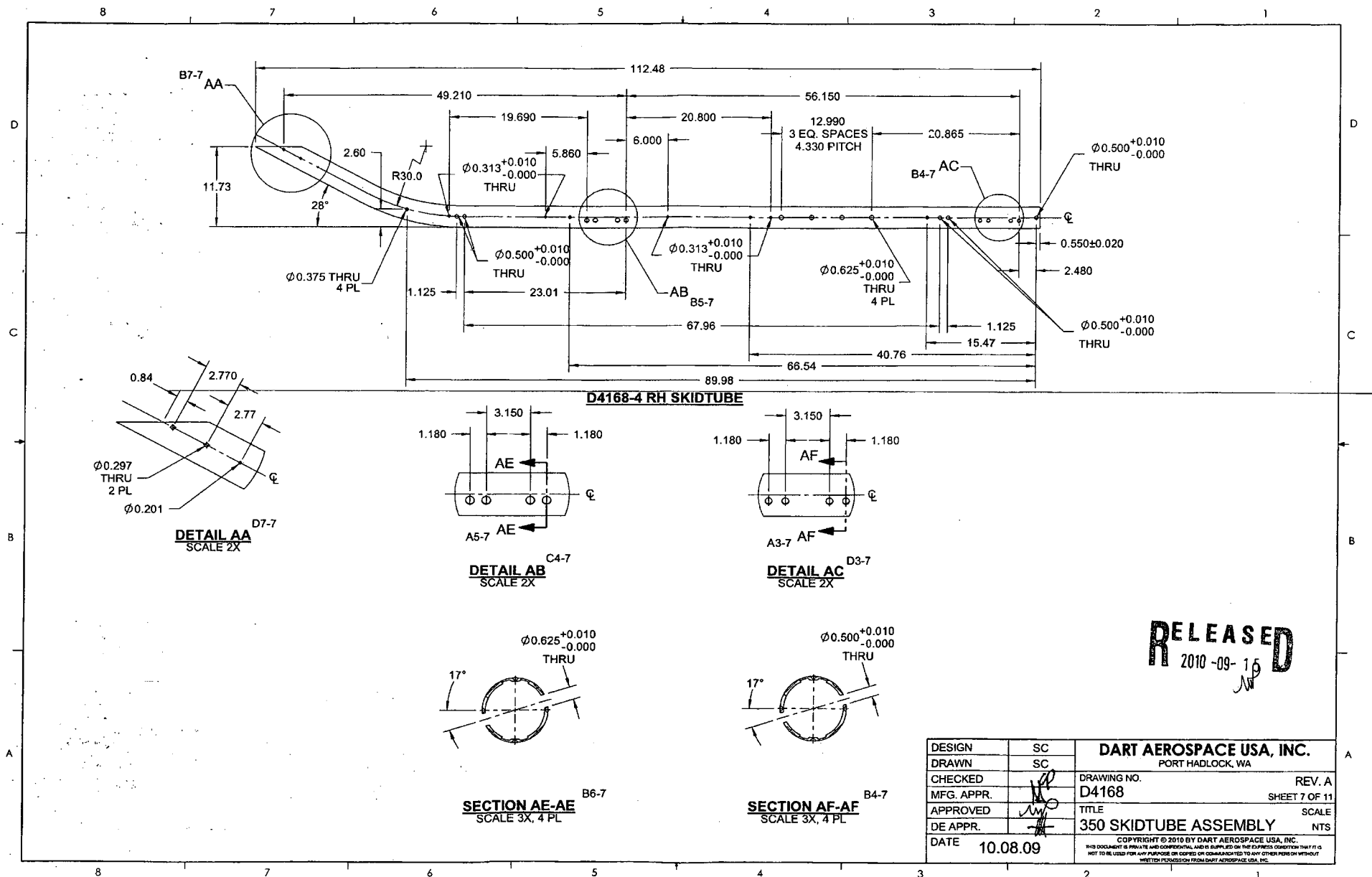
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Dart Aerospace Ltd

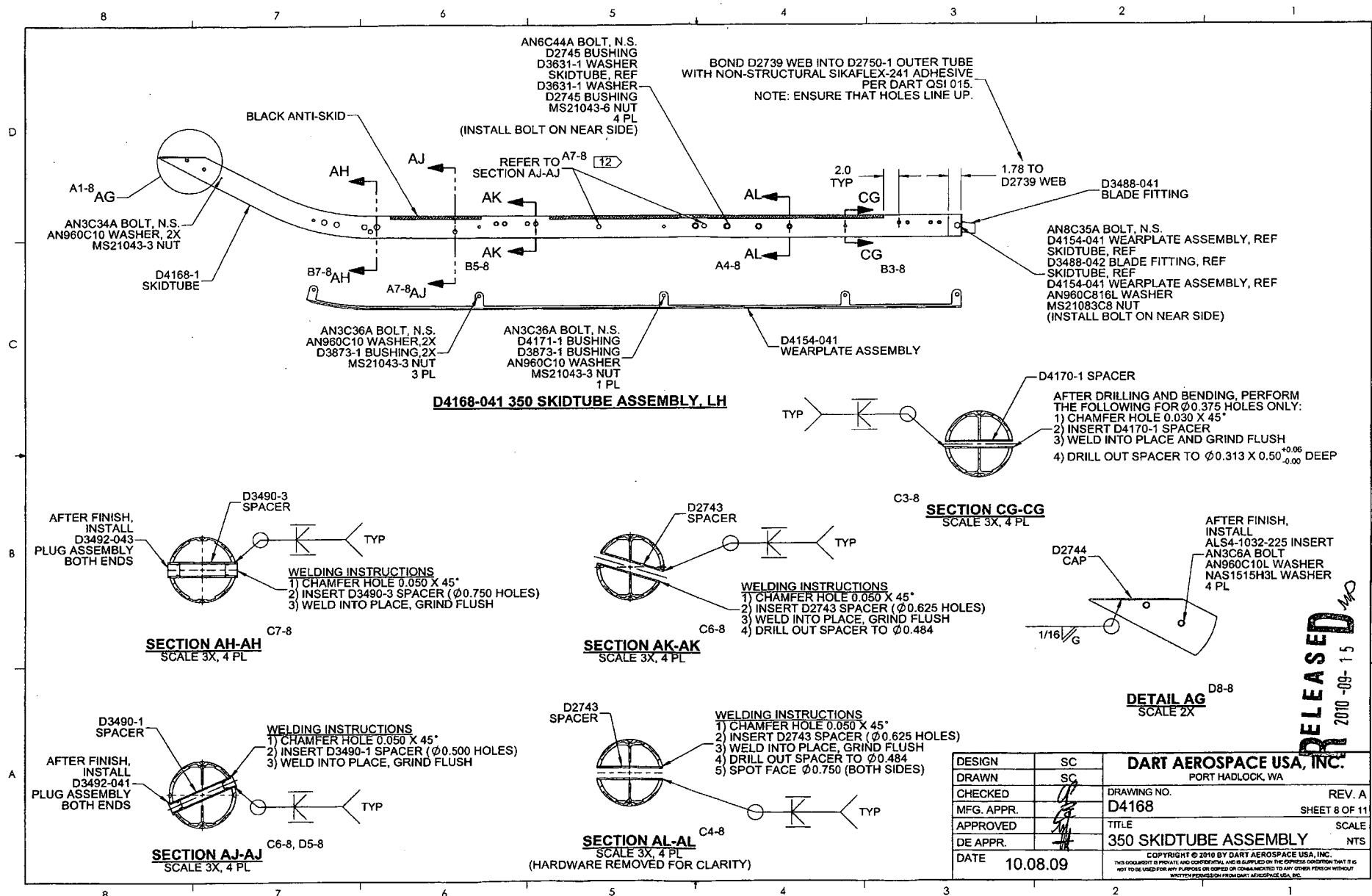
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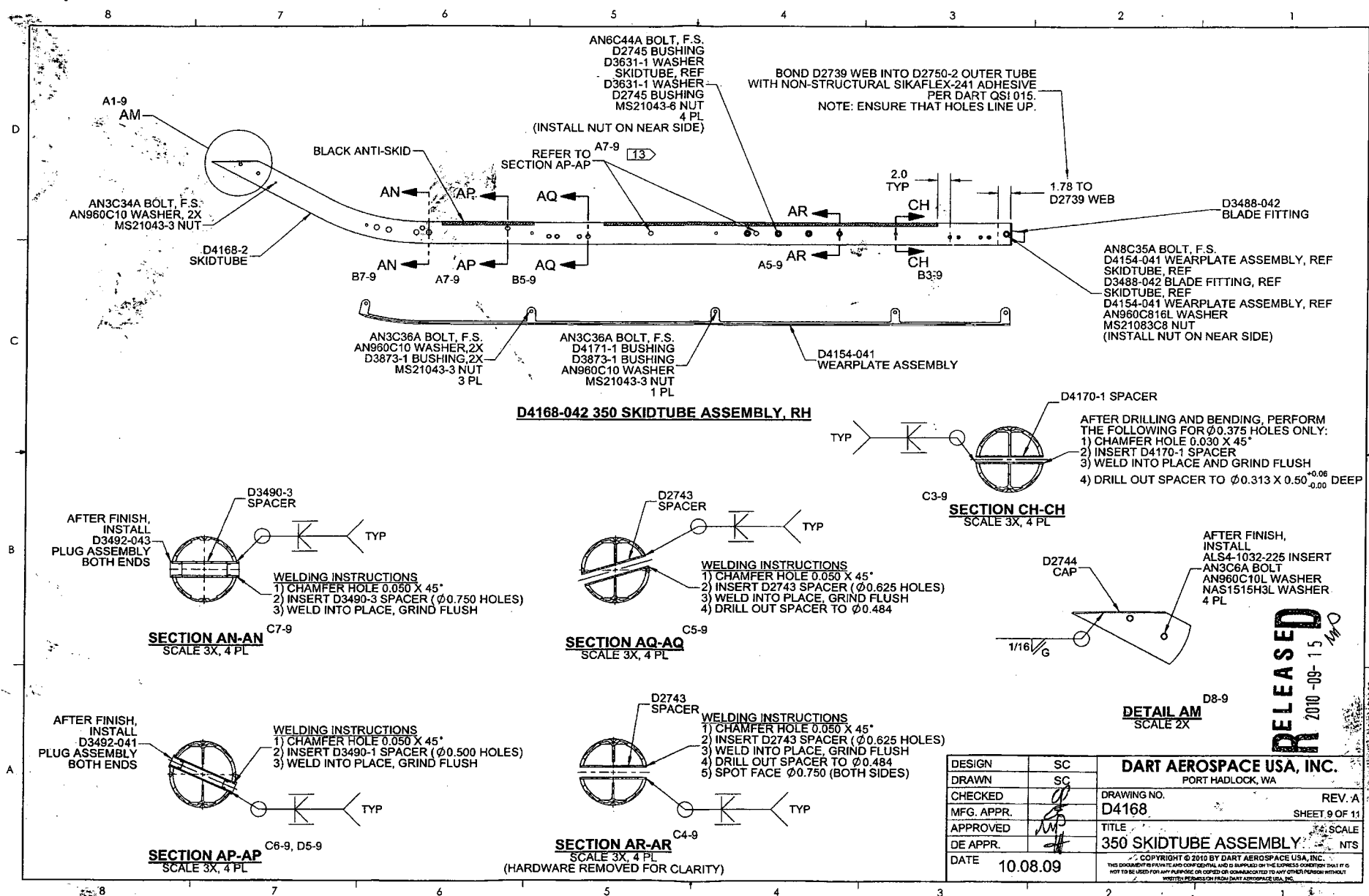
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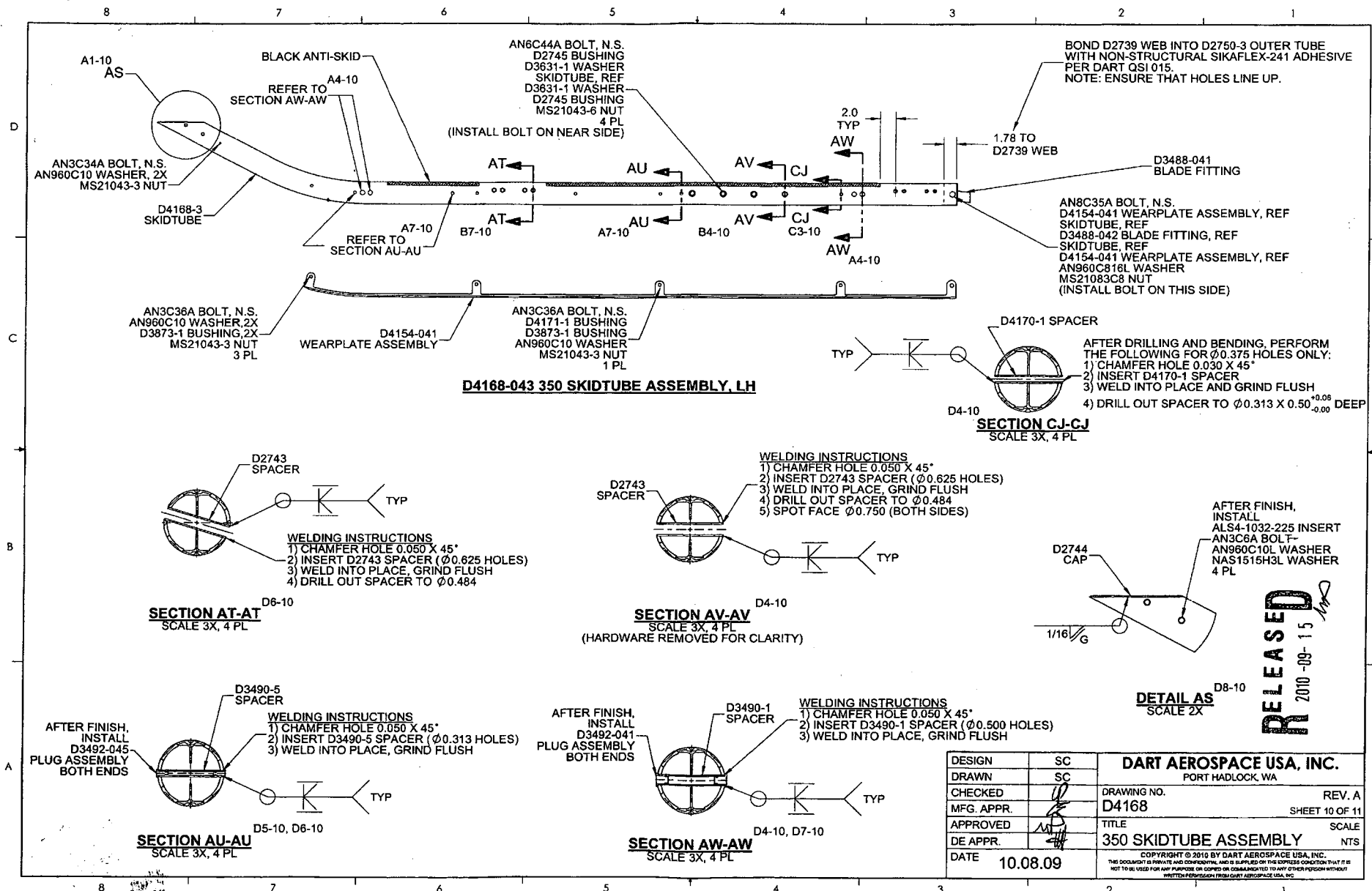
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

D4168-044 350 SKIDTUBE ASSEMBLY, RH

SECTION BB-BB
SCALE 3X, 4 PL

SECTION BC-BC
SCALE 3X, 4 PL

SECTION BE-BE
SCALE 3X, 4 PL

SECTION CK-CK
SCALE 3X, 4 PL

DETAIL BA
SCALE 2X

WELDING INSTRUCTIONS

1) CHAMFER HOLE 0.050 X 45°
2) INSERT D2743 SPACER (Ø0.625 HOLES)
3) WELD INTO PLACE, GRIND FLUSH
4) DRILL OUT SPACER TO Ø0.484

WELDING INSTRUCTIONS

1) CHAMFER HOLE 0.050 X 45°
2) INSERT D2743 SPACER (Ø0.625 HOLES)
3) WELD INTO PLACE, GRIND FLUSH
4) DRILL OUT SPACER TO Ø0.484

WELDING INSTRUCTIONS

1) CHAMFER HOLE 0.050 X 45°
2) INSERT D3490-1 SPACER (Ø0.500 HOLES)
3) WELD INTO PLACE, GRIND FLUSH

WELDING INSTRUCTIONS

1) CHAMFER HOLE 0.050 X 45°
2) INSERT D3490-1 SPACER (Ø0.500 HOLES)
3) WELD INTO PLACE, GRIND FLUSH

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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NO. 294

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barday Elliott
Job number: 83800
Part number: A350-636-012
Description: Skid tube
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual:

pass[☒] fail[]

Penetration:

pass[☒] fail[]

UNACCEPTABLE

Cracks:

pass[☒] fail[]

Undercut:

pass[☒] fail[]

Pin holes:

pass[☒] fail[]

Overlap (cold lap)

pass[☒] fail[]

Porosity (surface):

pass[☒] fail[]

Coloration:

pass[☒] fail[]

Qualifier David Arual

Date of Test Coupon 12.05.09

Welder Barday Elliott

Date of Test Coupon 12.05.09

The above named individual is qualified in accordance with AWS D17.1.2001 to weld